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EXAMINER

MOHAMEDULLA, SALEHA R

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 09/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/920,504

Applicant(s)

AKBAR, SHAHZAD

Examiner

Saleha R. Mohamedulla

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20,36,37,39,40,42,43,45,46,49 and 51 is/are rejected.
- 7) ☒ Claim(s) 21-35,38,41,44,47,48,50 and 52-58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claims 1-58 are pending.

Specification

1. The abstract of the disclosure is objected to because in line 1, the abstract states that the photomask is reference number 19; however, the photomask is referred to as 8 in the drawings.

Correction is required. See MPEP § 608.01(b).

2. The disclosure is objected to because of the following informalities:

On page 12, the first line should read "What is claimed is:" because with the first line, each claim should form a complete sentence.

Also, "ESD" is used to refer to both "electrostatic damage" (page 1) and "electrostatic discharge" (page 3).

Appropriate correction is required.

Claim Objections

3. Claims 50, 54, and 57 are objected to because of the following informalities: claim 50 is a duplicate of claim 48, claim 54 is a duplicate of claim 52 and claim 57 is a duplicate of claim 55. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 6, 7, 9, 10, 12-14, 16-18, 20, 36, 37, 39, 40, 42, 43, 45, 46, 49 and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by US# 6,440,617 to Deng et al.

Deng teaches a photomask structure with anti-electrostatic-discharge ability. Figure 1 shows the mask. The photomask possesses a pattern 102 formed on one side of the photomask. The photomask can be formed of quartz and the pattern 102 can be made of chromium (col. 2, lines 29-32). Quartz is also known as fused silica. Deng teaches that the photomask and the pattern 102 are enclosed by a conductive structure 103, which comprises a conductive dust pellicle 108, a conductive frame 106 and a conductive film 104 (col. 2, lines 33-37). The conductive dust pellicle is formed of a material which has a conductive and high transparent ability. The conductive pellicle can be polymer (col. 2, lines 44-46). Therefore, Deng teaches a substrate 100 having a front face and a back face. Since the substrate is made of quartz, it is transparent to light. Because Deng teaches a photomask, it is inherent that the pattern 102 is permanently applied to the face of the substrate. Because Deng teaches that the pattern is made of chromium, Deng teaches that the pattern is opaque to light. Deng teaches that the conductive structure 103 comprises the pellicle 108, which is highly transparent. As shown in Figure 1, the structure covers the pattern 102 and areas of the face not covered by the pattern 102. Therefore, Deng teaches a conductive film which is transparent to light and deposited so as to cover the portions of the face not covered by the pattern. Therefore, Deng teaches the limitations of claims 1 and 36.

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Because the pattern is also covered, Deng teaches the limitations of claims 2 and 37. The conductive structure 103 includes film 104 that covers the back face of the substrate and film 106, therefore a Faraday cage is formed around the substrate. Therefore, the limitations of claim 3 are met. Quartz is fused silica, the pattern is made of chromium and the conductive film is made of polymer, therefore, the limitations of claims 6, 7, 9, 10, 12, 13, 14, 16, 17, 18, 20, 39, 40, 42, 43, 45, 46, 49, and 51 are met.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 5, 8, 11, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US# 6,440,617 to Deng et al. in view of US Pub # 2002/0115001 to Hsue et al.

Deng teaches the limitations discussed above in paragraph 5. Deng does not teach the limitations of claim 4 drawn to the chromium pattern being permanently secured to the conductive film. Hsue teaches an electrostatic effect free mask. In Figure 3, Hsue teaches a side view of the mask. Hsue shows a substrate 30, a chrome film 31, a layer of chrome oxide 32 and a layer of conductive polymer 33 (paragraph 0016). The purpose of the conductive polymer layer is to prevent two adjacent patterns from electrostatic discharging effect. The material of the conductive polymer is transparent to light (paragraph 0017). Figure 4 shows a front view of the mask. Hsue shows the desired patterns and the transparent conductive polymer layer 33

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deposited on the surface of the desired patterns (paragraph 0018). Therefore, Hsue teaches that the conductive film covers all of the front face of the substrate as shown in Figure 3 and that the opaque pattern is permanently secured to the conductive film as the opaque chromium pattern is attached to the conductive film.

The references are analogous art as they are drawn to photomasks having electrostatic discharge protection. It would have been obvious to one of ordinary skill in the art to deposit the conductive layer of Deng directly onto the chromium pattern of Deng in order to prevent two adjacent patterns from electrostatic discharging and prevent damage to the actual circuit patterns (paragraph 0017). One of ordinary skill in the art would have a reasonable expectation of success as the materials for the conductive layer and opaque pattern in Deng are similar to the materials in Hsue. In addition, Hsue teaches that the existence of the conductive polymer layer will not affect exposure or development processes (paragraph 0018).

Allowable Subject Matter

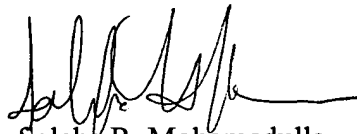
8. Claims 21-35, 38, 41, 44, 47, 48, 52, 53, 55, 56 and 58 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 50, 54, and 57 also contain allowable subject matter (as they are duplicates of claims 48, 52 and 55, respectively) however these claims would not be allowable because they are duplicate claims.

The prior art does not teach or suggest the recited wavelengths and corresponding conductive film materials and film thicknesses. The prior art also does not teach or suggest that the depositing step occurs prior to the applying step.

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Conclusion

9. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Saleha Mohamedulla whose telephone number is (703) 308-1260. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310. The After Final fax phone number is (703) 872-9311. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Saleha R. Mohamedulla
Patent Examiner
Technology Center 1700
September 4, 2003